

(21) Application No 8005469  
(22) Date of filing 19 Feb 1980  
(43) Application published  
26 Aug 1981  
(51) INT CL<sup>3</sup>  
B66B 9/12  
(52) Domestic classification  
B8A LTR15 W7  
(56) Documents cited  
None  
(58) Field of search  
B8A  
(71) Applicant  
John Bernard Marsh,  
24 Cheyne Gardens,  
Aigburth, Liverpool 19  
(72) Inventor  
John Bernard Marsh  
(74) Agent  
R. J. Axtell,  
6 Dene Hollow, Kings  
Heath, Birmingham B13  
0EL

(54) Escalator Safety Device

(57) A potential safety hazard in escalators is the clearance gap between the edge of the travelling staircase 1 and the escalator side walls 4. In order to minimise the risk of clothing or feet becoming trapped in this gap it is proposed that a strip of brush-like bristles be arranged to project from the escalator side wall

across the clearance gap and over the lateral edge of the travelling staircase. The length of the bristles are such that a passenger will contact the bristle ends before reaching the edge of the staircase and reflex action will cause the passenger to move away from the side wall. The bristles, preferably extend at right angles to the side wall and are disposed in a plane parallel to the escalator movement.

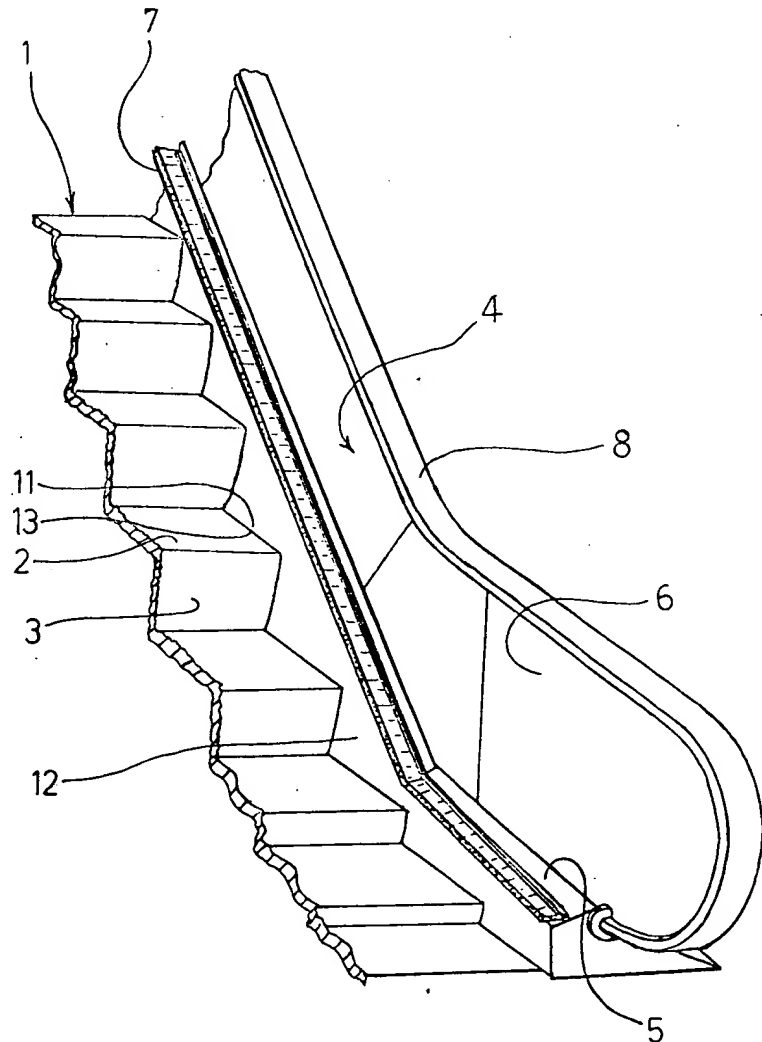
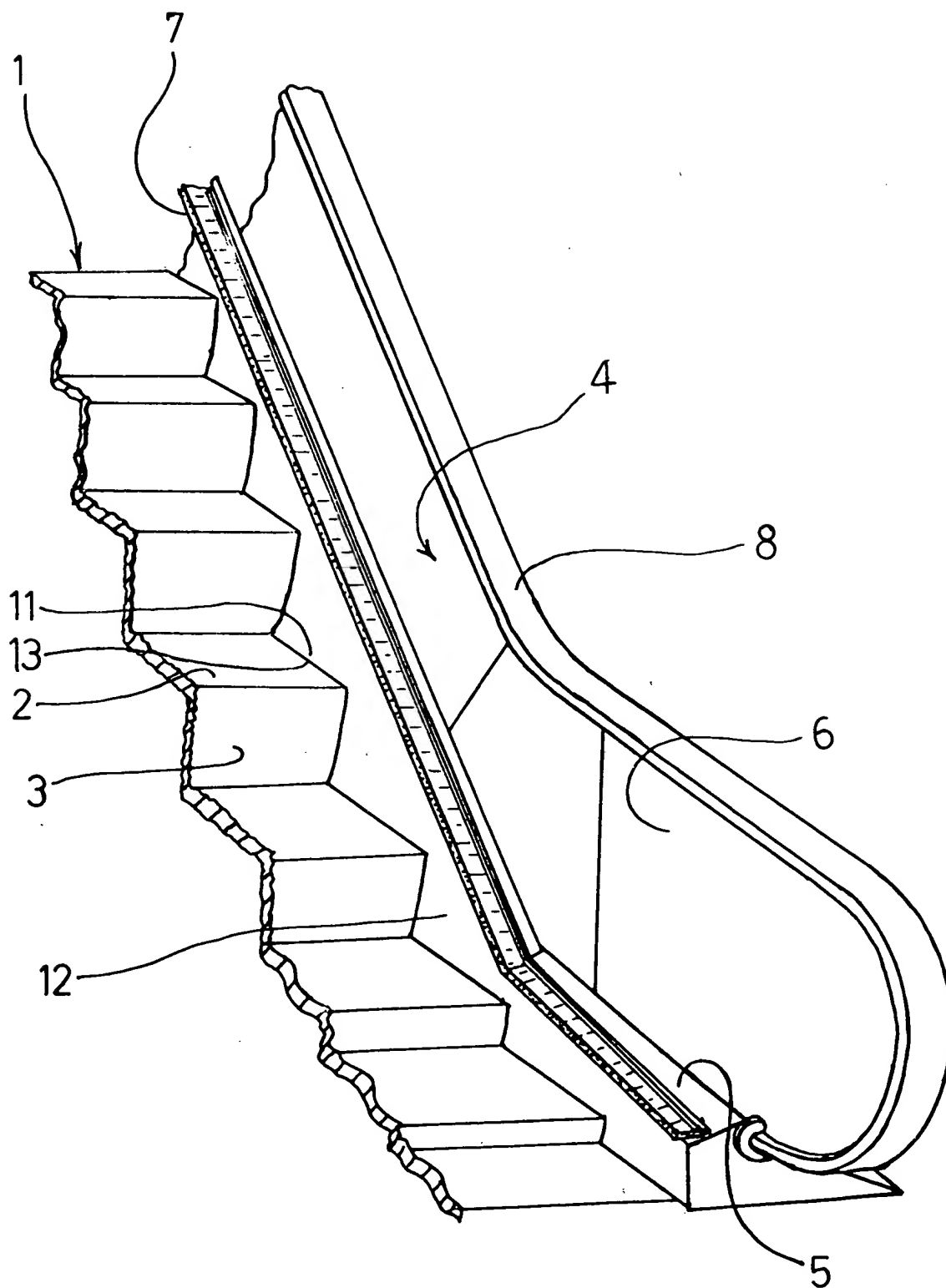


FIG. 1

$\frac{1}{2}$ 

2/2

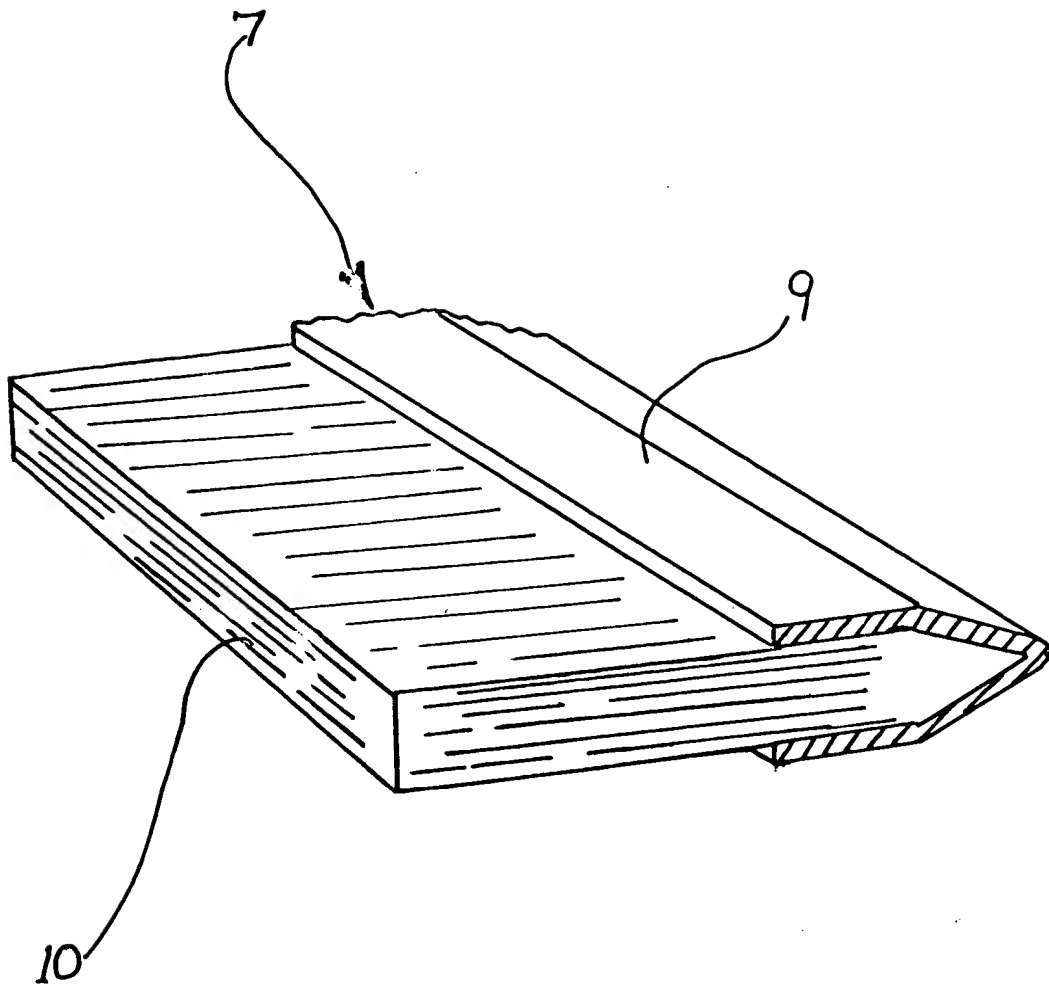


FIG. 2

## SPECIFICATION

### Escalator Safety Device

This invention concerns a safety device for escalators, or moving staircases, travelling pavements and the like.

An escalator generally comprises two opposed sidewalls forming balustrades, with a staircase, in the form of a plurality of steps, disposed between the sidewalls. The staircase moves between the sidewalls, and each step comprises a generally horizontally disposed tread portion, and an associated downwardly depending riser portion. In order to permit the relatively free movement of the escalator staircase between the sidewalls, a gap is provided at the side edge of each tread and riser.

In order to minimise the possibility of passengers accidentally catching their feet or clothing in the gap between tread edge and sidewall a previously used safety measure was to paint a yellow border along the tread edges and display warning notices at the entrances to escalators warning passengers to stay within the physical limits of the yellow border. This had the disadvantage that when passengers disregarded or failed to read the warning notices the safety measure was rendered ineffective.

Other more complex safety devices employed displacement sensors attached to the tread edges and arranged to sense lateral displacement due to any body caught in the gap between tread edge and sidewall. When such displacement occurred, the sensor switched off the escalator power supply. However, such arrangements were complex and expensive.

In accordance with the present invention an escalator having opposed sidewalls with a movable staircase disposed therebetween, is provided with a row of bristles extending from either sidewall over the tread edges of said movable staircase.

The bristles are preferably formed in tufts and attached to a common base, to form a continuous strip, which is then attached to the sidewall.

The bristles are preferably made from nylon or a similar plastics material. Preferably, though not exclusively, the bristles are arranged to project at substantially right angles to the sidewalls.

The continuous strip of bristles is preferably arranged parallel to the gradient of the escalator staircase and is preferably mounted at a height above said staircase coinciding with the lower leg region of passengers.

The length of the bristles may be chosen to project over the tread edges as required.

The invention will now be further described, by way of example only, with reference to the accompanying drawing in which:—

Fig. 1 shows a diagrammatic perspective view of the lower part of an escalator in accordance with the invention, and:

65 The staircase 1 of an escalator is a linked series of steps comprising a generally horizontally-disposed tread 2 and an associated downwardly depending riser 3.

The balustrade 4 comprises a sidewall 6 having a shoulder portion 5 formed at the lower part of said sidewall, and a further sidewall 12, downwardly depending from said shoulder portion. The sidewall portion 12 is disposed along the edges 13 of the treads 2, so that a running clearance is provided between tread edge 13 and sidewall 12 to form a gap 11.

The upper edge of the balustrade carries a moving handrail 8 which is arranged to move in unison with the staircase 1.

80 The strip portion 7 shown in Fig. 2 comprises a series of bristles 10 mounted in an elongate channel section 9, providing a convenient means by which the strip of bristles may be fixed to the escalator. The strip 7 is shown in Fig. 1 mounted on the shoulder 5 of the balustrade 4. Other escalators may not have such a shoulder portion, but merely a plain, continuous sidewall extending downwards from moving handrail to tread edge. In this case, the strip of bristles can be attached to the sidewall. In either example the strip of bristles are arranged to project over the tread edges for the complete length of the escalator, preferably at right angles to the escalator sidewall, so that the outer ends of the bristles project into the travel path of the lower leg region of passengers standing at either side of the tread 2. Contact with the bristles causes the passenger to move away from the tread edge due to reflex action.

Other variations and arrangements are possible without departing from the invention and will occur to those skilled in the art.

### Claims

1. An escalator comprising a travelling staircase having a plurality of main stair bodies disposed and travelling along adjacent a skirt-plate defining a clearance gap between the lateral edge of each main stair body and said skirt-plate wherein bristles extend from said skirt-plate across said clearance gap and over said lateral edge of said main stair body.

2. An escalator as in claim 1 in which the bristles are disposed in a plane generally parallel to an imaginary plane connecting the transverse edges of said main stair bodies.

3. An escalator as in claims 1 or 2 in which the bristles project at substantially right angles to the skirt-plate.

4. An escalator as in claims 1 and 2 wherein the bristles are attached to the skirt-plate.

5. An escalator as in claim 4 wherein the bristles are mounted in a continuous row.

6. An escalator as in any of the preceding claims in which the bristles are arranged in a series of tufts mounted on a base member.

7. An escalator as in any of the preceding

hereinbefore with reference to and as illustrated in the accompanying drawings.

New Claims or Amendments to Claims Filed on  
10 February 1981

5 Superseded Claims 1 and 2

**New or Amended Claims:—**

- 10 1. An escalator or travelling pavement comprising a movable walkway having a main movable portion disposed adjacent a skirt-plate with a clearance gap between the lateral edge of the movable portion and the skirt-plate, wherein bristles extend from said skirt-plate across said clearance gap and beyond the lateral edge of the main movable portion.
- 15 2. An escalator according to claim 1 wherein

the movable portion comprises a plurality of interconnected stair bodies.

- 20 3. An escalator as in claim 2 in which the bristles are disposed in a plane generally parallel to an imaginary plane connecting the transverse edges of the movable walkway.

Previous claim 3 renumbered as claim 4, reading "An escalator as in any of claim 1 to 3 . . .".

- 25 Previous claim 4 renumbered as claim 5, reading "...as in any of claims 1 to 4...".

Previous claim 5 renumbered as claim 6, reading "... as in claim 5 . . .".

- 30 Previous claim 6 renumbered as claim 7, previous claim 7 renumbered as claim 8, and previous claim 8 renumbered as claim 9.